OGDEN ARSENAL, PROJECTILE LOADING WAREHOUSE
(OGDEN ARSENAL, BUILDING 2213)
(OGDEN ARSENAL, BUILDING ELP-16)
(OGDEN ARSENAL, MUNITIONS CONSTRUCTION SHOP)
6317 Poplar Lane
Layton Vicinity
Davis County
Utah

HAER No. UT-84-BK

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Denver, Colorado 80225-0287

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HISTORIC AMERICAN ENGINEERING RECORD

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Location: 6317 Poplar Lane, Hill Air Force Base, Layton Vicinity, Davis County, Utah

UTM: 12-415770-4555580

Date of Construction: 1941

Architect: Unknown

Builder: Unknown

Present Owner: Hill Air Force Base

Present Use: Munitions Construction Shop

Significance: Anti-tank ammunition was assembled in Building 2213, which provides particularly vivid images of the processes involved in the manufacture of munitions at Ogden Arsenal during World War II. This building, along with other structures at the base, renders a unique picture of the U.S. Army build-up which occurred on the eve of and during World War II.

History: Building 2213, the Projectile Loading Building, was one of two buildings in the East Loading Plant that were used for the final assembly of 37mm Anti-tank ammunition produced at Ogden Arsenal. Inert ammunition bodies were disassembled and inspected in Building 2213, and then loaded with the tracer, igniter, and bursting charges[1]. These partially completed shells were then transferred to Building 2214, where the shells were loaded with smokeless powder and tetryl and then packed for shipment.

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[1]For a description of these components, see the Individual Building Report for Building 1652, the Tracer & Igniter Pelleting Building.

Metal parts such as cartridge cases, projectiles, fuzes, and primers, were shipped to the Loading Plant in a finished state. Although components used in the loading and assembly of 37mm shells had been inspected before shipment to the Arsenal, it was found that a further inspection of critical items like empty shells prior to loading would increase efficient production in the loading operation. All dimensions of a representative sample of the inert shells were measured and the threads and recesses checked before they were loaded with the explosive fuzes, primers, detonators, and tracer/igniter charges in Building 2213.

Many of the ammunition components were stamped with certain insignias, lot numbers, or other figures prior to assembling the complete rounds of ammunition. Basic stamp presses (which did not include the stamps themselves) were obtained from private manufacturers and modified in the machine shops of Ogden Arsenal and then used in Building 2213.

An initial assembling and crimping machine for 37mm ammunition was developed at Ogden Arsenal in late 1941. The machine pressed the projectile into the cartridge case with a 4-stab crimp. Compressed air was used to actuate the manually operated machine. These first shells were easily knocked out of alignment during battle, though, since they were only crimped at four points. The need for a continuous crimping machine was evident. Personnel at Ogden Arsenal modified the 4-stab model machine in use and converted it into a continuous crimping machine, which crimped the casing around the entire shot. Such a continuous crimping machine was available commercially for about $7500, but the Ogden Arsenal machine shop was able to modify the machines already in use for $200-300 each.

The partially completed 37mm anti-tank ammunition was also inspected in Building 2213. Each armor-piercing shot was submitted to a 1000 pound dead weight test after the tracer and igniter charge were loaded. A dead weight test machine was assembled at Ogden Arsenal which had a capacity of 1000 pounds and was capable of performing the test on 37mm shots. The purpose of using this machine was to show whether the solder connection of the cap to the body of the shot was secure.

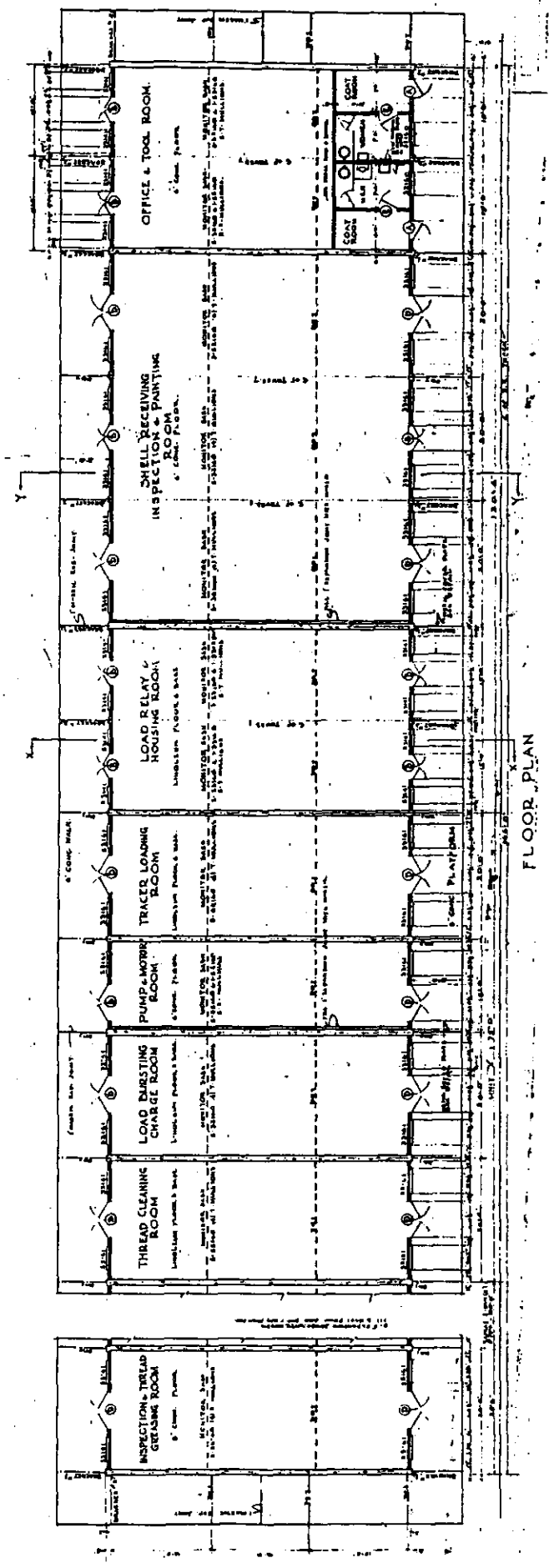
A complete round breakdown machine was developed at Ogden Arsenal to facilitate the process of dismantling a complete round of ammunition for testing and inspection. This machine was constructed to safely and quickly disassemble a complete round of 37mm ammunition.

In the 1950s, M26 hand grenades were manufactured in Building 2214.

General

Description: Building 2213 (366'-4" x 50'-4") is a one-and-one-half story building located in the original East Loading Plant area. The building is constructed with reinforced concrete shear walls that define 20 bays (either 15 of 20 feet wide) forming 16 rooms along its length. The structural supports are infilled with red tiles, the most common building material used throughout Ogden Arsenal. The building is elevated approximately four feet above grade on the west elevation that used to face railroad tracks. This elevation contains a continuous concrete loading dock accessing the railroad line. The building meets grade on the east elevation. The overall structure is 50'4" wide at the ground level and narrows to 16 feet wide at the monitor roof. The fifteen feet bays contain alternating clerestory windows of 6 and 10 pane awning windows. The 20 foot bays contain a continuous run of 6-pane awning clerestory windows. Each bay on the ground floor contains a double loading door flanked by 9-pane industrial windows.

The monitor structure consists of a gable truss, with a shed roof covering the remainder of the first floor. The roof is supported by a steel trusses which are covered by corrugated asbestos siding. Several lighting aerials are located along the roof ridge line. The concrete walls/columns project slightly on the exterior, but are not expressed on the roof line. A slightly steeper sloped roof extends over the six foot wide loading dock and walkway. Modifications include the replacement of some of the original doors with solid steel doors, and new openings on the short elevations.


OFFICE & TOOL ROOM
SHELL RECEIVING INSPECTION & PAINTING ROOM
LOAD RELAY & HOUSING ROOM
TRACER LOADING ROOM
PUMP & MOTOR ROOM
LOAD BURSTING CHARGE ROOM
THREAD CLEANING ROOM
INSPECTION - THREAD GAUGING ROOM
PLATFORM
FLOOR PLAN